Instructor: Dr. Siran Li
Office: 444 Herman Brown
Email: Siran.Li@rice.edu
Time: MWF 2:00-2:50PM
Classroom: Herman Brown Hall 227
Office Hours: Tu/W 5–6pm, or by appointment
Class Webpage: https://siranlivictor.wixsite.com/maths

Text: Farlow, Hall, McDill, West (2007). Differential Equations & Linear Algebra. Pearson.

Course Description: Differential Equations occur naturally in various subjects in natural and social sciences. For example, the motion of fluids, the evolution of geometric shapes, the growth of bacteria, the variations of the stock price and the classical/quantum harmonic oscillators etc.etc. are all modelled by differential equations. In this course we study ordinary differential equations (ODEs): the derivatives are taken with respect to only one variable. Throughout the computational and applied perspectives of the ODEs shall be emphasised.

Course outline: Review on differentiation. First-order ODEs. Rudiments of linear algebra. Higher-order ODEs. Systems of linear ODEs. Systems of nonlinear ODEs. The Laplace transform.

Assignments: Weekly problem sheets, due at the beginning of each **Friday's** lecture. The first sheet will be due on **Friday, 19 Jan. 2018**. Late sheets will not be accepted for any reason. The lowest assignment score will be dropped.

Exams: Two midterms + one final. The midterms are scheduled on **Tuesday, 13 Feb. 2018, 7–9pm** and **Tuesday, 20 Mar. 2018, 7–9pm**. The date for the final is not available at this time. It is the policy of the Mathematics Department that no final may be given early to accommodate student travel plans. If you make travel plans that later turn out to conflict with the scheduled exam, then it is your responsibility to either reschedule your travel plans or take a zero in the final. Books, notes and calculators will not be allowed on exams. Make-up exams will be allowed only in the case of a documented medical emergency. If an exam conflicts with a holiday you observe, please let me know before the end of the first week of classes.

Grading: The problem sheets will count as 20% towards your final grade. The remaining portion of your grade will be the **maximum** of the following four options:

- 25% Midterm I, 25% Midterm II, 30% Final.
- 20% Midterm I, 25% Midterm II, 35% Final.
- 25% Midterm I, 20% Midterm II, 35% Final.
- 20% Midterm I, 20% Midterm II, 40% Final.

Disability support: Any student with a documented disability seeking academic adjustments or accommodations is requested to speak with me during the first two weeks of class. All such discussions will remain as confidential as possible. Students with disabilities will need to also contact Disability Support Services in the Allen Center.

Expectations: I expect you to attend every class and to arrive on time. It is your responsibility to keep informed of any announcements, syllabus adjustments, or policy changes made during scheduled classes. Not all announcements will be posted on the website.

Teaching assistants, recitations and tutoring services: There will be a graduate TA for the course. More information about the TA and his/her office hours will be updated soon.

Contacting me: By email at ⟨`Siran.Li@rice.edu`⟩, or preferably, come to my office hours on Tuesdays and Wednesdays from 5 to 6pm in 444 Herman Brown, or knock on my door at any time.